

REMARKS

Claim Rejections

Claims 1, 2, 4, 6 and 8-15 are rejected under 35 U.S.C. § 102(e) as being anticipated by Baba (U.S. 2003/0209808A1). Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Baba. Claims 5 and 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the applied reference as applied to claims 1-4, 6, and 8-15, and further in view of McCormick (U.S. 6,369,448).

Abstract of the Disclosure

Applicant is submitting a substitute Abstract of the Disclosure for the originally filed with this application to more clearly describe the claimed invention. Entry of the substitute Abstract of the Disclosure is respectfully requested.

Drawings

It is noted that no Patent Drawing Review (Form PTO-948) was received with the outstanding Office Action. Thus, Applicant must assume that the drawings are acceptable as filed.

Claim Amendments

By this Amendment, Applicant has amended claims 1, 2 14 and 15, and has added new claims 16-18 to this application. It is believed that the amended and new claims specifically set forth each element of Applicant's invention in full compliance with 35 U.S.C. § 112, and define subject matter that is patentably distinguishable over the cited prior art, taken individually or in combination.

The primary reference to Baba discloses a semiconductor device including a package substrate (2) with an opening (21), a first semiconductor chip (11), and a second semiconductor chip (12) connected to the first semiconductor chip by bumps (3), and a plurality of solder balls (4) connected to the package substrate.

On page 3 of the outstanding Office Action, the Examiner admits that Baba fails "to teach wherein the opening is circular or ellipse shape." On page 4 of the outstanding Office Action, the Examiner admits that Baba "fails to teach wherein the first chip is a logic chip and wherein the second chip is a memory chip." Baba does not teach the concave wall is not parallel to the side surface of the second chip.

It is axiomatic in U.S. patent law that, in order for a reference to anticipate a claimed structure, it must clearly disclose each and every feature of the claimed structure. Applicant submits that it is abundantly clear that Baba does not disclose each and every feature of Applicant's amended claims, and, therefore, could not possibly anticipate these claims under 35 U.S.C. § 102. Specifically, Baba does not disclose the concave wall is not parallel to any of the plurality of side surfaces of the second chip. Absent a specific showing of these features, Baba cannot be said to anticipate Applicant's amended claims under 35 U.S.C. § 102.

The secondary reference to McCormick discloses a vertically integrated flip chip semiconductor package including a packaging substrate (102), a smaller chip (112), a larger chip (110), solder bumps (116), located between the packaging substrate and a smaller chip, and a conductive adhesive (122) connecting the smaller chip and the larger chip.

McCormick does not teach a package substrate having a concave wall between the top surface and the bottom surface, wherein the concave wall defines a chip accommodation space; the concave wall is not parallel to the side surface of the second chip; nor does McCormick teach the opening is circular or elliptic shape.

Even if the teachings of Baba and McCormick were combined, as suggested by the Examiner, the resultant combination does not suggest that the concave wall is not parallel to the side surface of the second chip; nor does the combination suggest the opening is circular or elliptic shape.

It is a basic principle of U.S. patent law that it is improper to arbitrarily pick and choose prior art patents and combine selected portions of the selected patents on the basis of Applicant's disclosure to create a hypothetical combination which allegedly renders a claim obvious, unless there is some direction in the selected prior art patents to combine the selected teachings in a manner so as to negate the patentability of the claimed subject matter. This principle was enunciated over

40 years ago by the Court of Customs and Patent Appeals in In re Rothermel and Waddell, 125 USPQ 328 (CCPA 1960) wherein the court stated, at page 331:

The examiner and the board in rejecting the appealed claims did so by what appears to us to be a piecemeal reconstruction of the prior art patents in the light of appellants' disclosure. ... It is easy now to attribute to this prior art the knowledge which was first made available by appellants and then to assume that it would have been obvious to one having the ordinary skill in the art to make these suggested reconstructions. While such a reconstruction of the art may be an alluring way to rationalize a rejection of the claims, it is not the type of rejection which the statute authorizes.

The same conclusion was later reached by the Court of Appeals for the Federal Circuit in Orthopedic Equipment Company Inc. v. United States, 217 USPQ 193 (Fed.Cir. 1983). In that decision, the court stated, at page 199:

As has been previously explained, the available art shows each of the elements of the claims in suit. Armed with this information, would it then be non-obvious to this person of ordinary skill in the art to coordinate these elements in the same manner as the claims in suit? The difficulty which attaches to all honest attempts to answer this question can be attributed to the strong temptation to rely on hindsight while undertaking this evaluation. It is wrong to use the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit. Monday morning quarterbacking is quite improper when resolving the question of non-obviousness in a court of law.

In In re Geiger, 2 USPQ2d, 1276 (Fed.Cir. 1987) the court stated, at page 1278:

We agree with appellant that the PTO has failed to establish a *prima facie* case of obviousness. Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching suggestion or incentive supporting the combination.

Applicant submits that there is not the slightest suggestion in either Baba or McCormick that their teachings may be combined as suggested by the Examiner. Case law is clear, the absent any such teaching or suggestion in the prior art, such a combination cannot be made under 35 U.S.C. § 103.

Neither Baba, nor McCormick disclose, or suggest a modification of their specifically disclosed structures that would lead one having ordinary skill in the art to arrive at Applicant's claimed structure. Applicant hereby respectfully submits that no combination of the cited prior art renders obvious Applicant's new and amended claims.

Summary

In view of the foregoing amendments and remarks, Applicant submits that this application is now in condition for allowance and such action is respectfully requested. Should any points remain in issue, which the Examiner feels could best be resolved by either a personal or a telephone interview, it is urged that Applicant's local attorney be contacted at the exchange listed below.

Respectfully submitted,

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